

Purcell, however, does not disclose the use of a retro-reflective member. The function of a retro-reflective mirror is explained at page 7, ll. 18-19 of the present application: "As used herein, retro-reflective means having the ability to reflect a ray of light substantially in the direction of its source." The reflective member of Purcell does not have the ability to reflect a ray of light substantially in the direction of its source. The reflective mirror shown as element 72 in figure 6 of Purcell is simply a plain mirror. The mirror disclosed by Purcell reflects incident light according to the ordinary laws of reflection, i.e. angles of reflection equal the angles of incidence, in contrast to being reflected substantially in the direction of its source. Thus, there is no indication in Purcell that any light-reflecting members have retro-reflective properties.

The lack of a retro-reflective member requires that Purcell use microlouvers to detect changes in light levels at any point along a line normal to an illuminating axis. At col. 3, ll. 64-68, Purcell discloses a system for attenuating light that is not orthogonally reflected:

Improved resolution is obtained by maximizing detection of the orthogonally-reflected rays and minimizing detection of light rays at other angles. The function of the microlouvers 17, 18 does exactly that.

Thus, the lack of retro-reflective properties in Purcell requires further means for collimating light located in front of detectors. This is necessarily accomplished through the use of the microlouvers.

Therefore, the Applicants respectfully traverse the Examiner's finding that claim 1 is anticipated by Purcell and request the withdrawal of this rejection.

In general, the dependent claims 2, 9-12 and 14-15 recite further limitations to independent claim 1. Since, as stated above, the independent claim is allowable, the dependent claims should also be allowed.

The Examiner has rejected claims 11 and 12 as being disclosed by the linear image sensor of the Purcell abstract and the microprocessor of Purcell figure 4. Even if Purcell discloses a linear image sensor and microprocessor, there is nothing in Purcell to disclose or suggest the generation of a virtual image as required by claims 11 and 12. Purcell at col. 5, ll. 25-28 discloses that "[a]fter

outputting from the photosensors, the signals are processed in a manner as will be explained with reference to FIG. 4 to determine the exact position of the cursor on the tablet plane." This processing by Purcell does not generate an image, much less a virtual image.

The Examiner also rejected claim 10, noting that "since the target is a cursor, thus the mouse is a holder." The target of claim 10 cannot be the cursor of Purcell. The cursor of Purcell "is provided with a light reflective cylinder." (Col. 3, ll. 26-27.) There is no requirement in the present application that a target be similarly reflective. Additionally, Purcell notes that "a probe or cursor 10 is freely movable over the surface 11 of a tablet 12." (Col. 3, ll. 20-21.) There is no requirement in the present application that a target be movable in this manner.

Thus, for these additional reasons, claims 10-12 are considered allowable over Purcell.

Claims 1, 2, 9-12, 14-15 and 21-23 also stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,220,409 to Bures, for the reasons stated on page 3 of the Office Action. These rejections are respectfully traversed.

Regarding claims 1 and 21-23, the Examiner has stated that Bures discloses "an elongated retro-reflective member (30, 44)." Bures, however, does not disclose a retro-reflective member. As discussed above, a retro-reflective member is one having the ability to reflect a ray of light substantially in the direction of its source. Bures discloses "a parabolic reflector 30" at col. 4, line 12 and a "holographic plate 44" at col. 6, line 10. The holographic plate 44 is provided with "a reflective hologram pattern simulating a parabolic mirror." (Col. 6, ll. 26-27.) A parabolic reflector and a hologram pattern simulating a parabolic reflector do not have the ability to reflect a ray of light substantially in the direction of its source. Thus, Bures does not disclose the use of a retro-reflective member.

Therefore, the Applicants respectfully traverse the Examiner's finding that claim 1 is anticipated by Bures and request the withdrawal of this rejection.

In general, the dependent claims 2, 9-12 and 14-15 recite further limitations to independent claim 1. Since, as stated above, the independent claim is allowable, the dependent claims should also be allowed.

The Examiner has stated that Bures at col. 8, ll. 22-24 discloses the subject matter of claims 11, 12, 14 and 15. Regarding claims 11 and 12, Bures does not disclose or otherwise suggest the generation of a virtual image, as required by claims 11 and 12. Regarding claim 14, Bures does not disclose the use of a laser, as required by claim 14. Bures only discloses a "light source" without further indication as to its type or nature.

Thus, for these additional reasons, claims 11, 12 and 14 are considered allowable over Purcell.

Claims 3-5, 13 and 16-20 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over Purcell or Bures in view of U.S. Patent No. 5,871,215 to Butts for the reasons stated on page 4 of the Office Action. These rejections are respectfully traversed.

Regarding claims 3-5, the Examiner has stated that one of ordinary skill in the art at the time the invention was made would "replace the retro-reflective member of Purcell or Bures by a plurality of corner cube reflectors taught by Butts or a plurality of glass beads or retro-reflective tape." However, because Purcell and Bures, as discussed above, do not disclose or otherwise suggest the use of a retro-reflective member, there can be no motivation to combine Purcell or Bures with Butts for alternative retro-reflective means.

Furthermore, it is noted that the system disclosed by Butts is materially different from the present invention and that these substantial differences would not lead one of ordinary skill in the art to combine Butts with any other references. Butts teaches a single, mechanically scanning illuminator in conjunction with a photodetector. The scanner of Butts rotates so that the linear array of corner-cube reflectors is sequentially illuminated. The reflected light returns directly to the source and a beamsplitter isolates the outgoing beam from the returning beam and directs the returned light to the photodetector. Thus, the Butts system is materially different from the claimed invention and it therefore would not have been obvious to combine Purcell or Bures with Butts to

arrive at the invention of claims 3-5. Furthermore, there is no disclosure or suggestion in Butts to use retro-reflective tape or glass beads.

For the above reasons, claims 3-5 are considered allowable over Purcell or Bures in view of Butts.

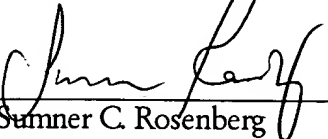
Regarding claim 13, there is no suggestion in either Purcell or Bures that an incandescent lamp should be used. Regarding claim 16, neither Purcell nor Bures disclose or suggest a curved mirror, disposed adjacent to the light bulb, having a radius of curvature and a distance from the light bulb so that light from the light bulb is projected onto the retro-reflective surface as required by claim 16. Because claims 17 and 18 depend from claim 16, and claim 19 depends on claim 16 through claim 18, they should also be considered allowable for this reason. Regarding claim 20, the examiner has stated that "Purcell and Bures teach that the light source is a lamp array and within the visible or infrared range." Claim 20, however, is not limited to a lamp array within the visible or infrared range. The examiner also stated that those of ordinary skill in the art at the time the invention was made would "replace the light source of Purcell or Bures by an incandescent lamp and a curved mirror for reflecting light because they are function in the same manner." Claim 20, however, is not limited to an incandescent lamp and a curved mirror for reflecting light and therefore cannot be disclosed by the cited references. Furthermore, the lamps of the present invention do not function in the same manner as those of Purcell or Bures. For at least these reasons, claim 20 should be considered allowable.

Additionally, because claims 3-5, 13 and 16 are dependent on claim 1, and claims 17 and 18 are dependent on claim 1 through claim 16, and claim 19 is dependent on claim 1 through claims 16 and 18, they are considered allowable for the same reasons as claim 1.

For the foregoing reasons, Applicant believes that all the claims are allowable. A Notice to this effect is respectfully solicited. The Examiner is invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

A check in the amount of \$110 is enclosed to pay for a one-month extension. However, the Examiner is authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 14-0629.

Respectfully submitted,

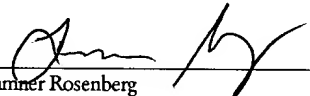


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date shown below.



Sumner Rosenberg

12/16/02  
Date